

UKOLOVA, T.P.

MODEL', M.S.; UKOLOVA, T.P.

Preparation and radiographic analysis of lower oxides of titanium.
Zhur.neorg.khim. 2 no.9:2274-2276 S '57. (MIRA 10:12)
(Titanium oxides) (Radiography)

UKOLOVA, T.P.

Ageyev, N.V., V.A. Reznichenko, R.P. Ukolova, and M.S. Model' (Institute of Metallurgy, Academy of Sciences USSR). On the Lower Oxides of Titanium, p. 64. Titan i yego splavy. vyp. II: Metallurgiya titana (Titanium and Its Alloys. No. 2: Metallurgy of Titanium) Moscow, Izd-vo AN SSSR, 1959. 179 p.

This collection of papers deals with sources of titanium; production of titanium dioxide, metallic titanium, and titanium sheet; slag composition; determination of titanium content in slags; and other related matters. The sources of titanium discussed are the complex sillimanite ores of the Kyakhtinskoye Deposit (Buryatskaya ASSR) and certain aluminum ores of Eastern Siberia. One paper explains the advantages of using ilmenite-titanium slags for the production of titanium dioxide by the sulfuric acid method. Production of metallic titanium by thermal reduction processes (hydrogen, magnesium, and carbon reduction) is the subject of several papers, while other papers are concerned with the electrolytic production of titanium. Other subjects dealt with are interaction of titanium with water vapor and with hydrogen and the determination of titanium in slags.

AGEYEV, N.V.; REZNICHENKO, V.A.; UKOLOVA, T.P.; MOJHL', M.S.

Lower titanium oxides. Titan i ego splavy 10.2:64-72 '59.
(MIRA 13:6)

1. Institut metallurgii AN SSSR.
(Titanium oxides)

REZNICHENKO, V.A. (Moskva); UKOLOVA, T.P. (Moskva)

Effect of the addition of lower titanium oxides on the reduction
of ilmenite by carbon. Izv. AM SSSR. Otd. tekh. nauk. Met. i topl. no.4;
26-28 Jl-Ag '80. (MIRA 13:9)
(Ilmenite) (Titanium--Metallurgy)

REZNICHENKO, V.A.; UKOLOVA, T.P.

Investigating interaction processes of the lower titanium
oxides with ilmenite. Titan i ego splavy no.5:75-79 '61.

(MIRA 15:2)

(Ilmenite)
(Titanium oxide)
(Phase rule and equilibrium)

REZNICHENKO, V.A.; UKOLOVA, T.P.

Synthesis of anosovite and of solid solutions on the basis of
a titanium sesquioxide lattice. Titan i ego splavy no.5:80-84
'61.
(MIRA 15:2)

(Anosovite)
(Titanium oxide)

S/137/62/000/006/032/163
A006/A101

AUTHORS: Reznichenko, V. A., Ukolova, T. P.

TITLE: Investigating interaction processes of lower titanium oxides with ilmenite

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 13, abstract 6G98
(In collection: "Titan i yego splavy", no. 5, Moscow, AN SSSR, 1961,
75 - 79)

TEXT: Experiments on the interaction of ilmenite with Ti_2O_3 were conducted under neutral conditions and in a vacuum. With an increasing ilmenite : Ti_2O_3 ratio, the completeness of interaction decreases, i.e. the higher the solubility of ilmenite in Ti_2O_3 , the lower its activity. Activity of Ti^{3+} is particularly reduced with its decreasing concentration in the ilmenite. If the ilmenite : Ti_2O_3 ratio is 0.25 : 1, a solid solution of ilmenite in Ti_2O_3 is formed, named "tagirovite". At a higher ratio a solid solution of Ti_2O_3 in the ilmenite, the crichtonite, is formed. At a ratio > 0.5 : 1, a solid solution is formed being ferrous anosovite.

[Abstracter's note: Complete translation]

L. Vorob'yeva

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Card 1/1

REZNICHENKO, V.A.; UKOLOVA, T.P.

Studying processes of the interaction of ilmenite with titanium monoxide. Titan i ego splavy no.8:49-54 '62.
(Ilmenite) (Titanium oxide) (MIRA-16:1)

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7

REZNICHENKO, V.A.; KHALIMOV, F.B.; UKOLOVA, T.P.

Titanium oxides. Titan i ego splavy no.9:42-69 '63.(MIRA 16:9)
(Titanium oxide)

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

PHASE I BOOK EXPLOITATION

SOV/4962

Ukolova, Yelena Nikolayevna

Avtomatischekaya svarka (Automatic Welding) Moscow, Mashgiz, 1960. 147 p. 25,000 copies printed.

Reviewer: S. I. Mikhaylov, Candidate of Technical Sciences; Ed.: Yu. A. Denisov, Engineer; Tech. Ed.: N. A. Dugina; Executive Ed. of Ural-Siberian Department (Mashgiz): A. V. Kaletina, Engineer.

PURPOSE: This book is intended for use as a textbook for welders in training.

COVERAGE: The author discusses the automatic welding of steel and nonferrous metals. Welding techniques are reviewed and data are included on the properties, use, and manufacture of fluxes employed in automatic welding. Modern automatic-welding equipment is described and information on the operation and repair of this equipment

Card 1/5

Automatic Welding

SOV/4962

is provided. Automatic-welding methods applied in various branches of industry are discussed. The book also contains material on welding defects, quality control of welds, and the economic aspects of automatic welding. No personalities are mentioned. Soviet references accompany each chapter.

TABLE OF CONTENTS:

Introduction	3
Ch. I. Essentials of Automatic Flux-Shielded Welding	3
1. The system of flux-shielded welding. Advantages of flux-shielded welding over manual arc welding	5
2. Electrical, thermal, and metallurgical processes in flux-shielded welding	5
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Ch. II. Fluxes and the Electrode Wire	15

Card 2/5

LARIONOV, A.K., doktor geologo-miner. nauk; UKOLOVA, Z.S., inzh.

Planning foundations of structures on clayey soils. Trudy
RISI no.6:35-41 '58. (MIRA 12:6)
(Foundations) (Soil mechanics)

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7

ZURNANZHI, V.A.; ANAN'IEV, V.P.; UKOLOVA, Z.S.

Determining possible deformations of sagging foundations and selecting
construction measures. Osn., fund. i mekh.grun. 5 no.6:23-25 '63.
(MIRA 16:12)

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7

DOBSHITS, M.L., inzh.; KARAMYSHEV, I.A., inzh.; UKRAINCHIK, M.M., inzh.

Exhibition of new machinery to be used in the construction of
transportation facilities. Transp. stroi. 8 no. 5:29-31 My '58.

(MIRA 11:7)

(Moscow--Road machinery--Exhibitions)

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

RATTS, Emmanuil Genrikhovich, kand.tekhn.nauk; TSSEYTLIN, Sholom Yudovich,
kand.tekhn.nauk; MASARSKIY, Aba Solomonovich; SHCHUKIN, Viktor
Semenovich; starshiy inzh.; UKRAINECHIK, N.M., inzh., red.

[Large prestressed concrete "Double T" slabs for roofs of buildings]
Predvaritel'noe napriazhennye zhelezobetonye krupnye paneli
"dvoince T" dlia pokrytii zdaniy; iz opyta NIIZHelezobetona i
zavoda No.22 Glavmospromstroimaterialov. Moskva, Gos.izd-vo lit-ry
po stroit., arkhit. i stroy.materialam, 1960. 27 p.

(MIRA 14:12)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organi-
zatsii, mekhanizatsii i tekhnicheskoy pomoschi stroitel'stvu.
Byuro tekhnicheskoy informatsii. 2. Zaveduyushchiy laboratoriyyey
sbornykh zhelezobetonnykh konstruktsiy Nauchno-issledovatel'skogo
instituta zhelezobetonnykh izdeliy i nerudnykh materialov (for Ratts).
3. Zaveduyushchiy sektorom inzhenernykh konstruktsiy Nauchno-issledo-
vatel'skogo instituta zhelezobetonnykh izdeliy i nerudnykh mate-
rialov (for TSseylin). 4. Glavnyy inzh. zavoda No.22 Glavmospro-
stroymaterialov (for Masarskiy). 5. Nauchno-issledovatel'skiy
institut zhelezobetonnykh izdeliy i nerudnykh materialov (for
Shchukin).

(Precast concrete construction)
(Roofing, Concrete)

PFUL', B.Ye., inzh.; UKRAINCHIK, M.M., inzh., red.

[The PV-1 and P-3 machines for unloading loose and fine materials from railroad cars] Mekhanizmy PV-1 i P-3 dlia vygruzki sypuchikh i melkokuskovykh materialov iz zhelezodorozhnykh vagonov; iz opyta TSentrakademstroia Akademii nauk SSSR. Moskva, Gos. izd-vo lit-ry po stroit., arkhit., i stroit. materialam, 1961. 13 p.

(MIRA 14:12)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva. Byuro tekhnicheskoy informatsii. 2. Glavnyy mekhanik TSentrakademstroya Akademii nauk SSSR (for Pfuf').

(Loading and unloading)

SOMOV, Valentin Ivanovich; EZDRIN, Konstantin Borisovich; ANISIMOV, Feliks Vladimirovich, inzh.; UKRAINCHIK, M.M., inzh., red.

[Residential building made of three-dimensional vibration-rolled elements; from construction practices in block no. 113 of Novyye Kuz'minki (Moscow)] Zhiloi dom iz ob'emnykh vibro-prokatnykh elementov; opyt stroitel'stva v 113 kvartale Novykh Kuz'minok (Moskva). Moskva, Gosstroizdat, 1961. 41 p.

(MIRA 15:8)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva. Byuro tekhnicheskoy informatsii. 2. Glavnyy inzhener konstruktorskogo otdela Moskovskogo instituta tipovogo i eksperimental'nogo proyektirovaniya Moskovskogo gorodskogo soveta deputatov trudyashchikhsya (for Somov). 3. Rukovoditel' gruppy metodicheskikh kabinetov tresta "Mosorgstroy" Glavnogo otdeleniya po zhilishchnomu i grazhdanskому stroitel'stvu v gorode Moskve (for Ezdrin). 4. Metodicheskiy kabinet tresta "Mosorgstroy" na zastroyke rayona Novyye Kuz'minki (for Anisimov).

(Precast concrete construction)
(Moscow—Apartment houses)

ROZENFEL'D, Aleksandr Grigor'yevich; EZDRIN, Konstantin Borisovich;
UKRAINCHIK, M.M., inzh., red.

[Construction of large-panel apartment houses according to
the series 1605A Standard plan of the "Giprostroyindustriia"
Institute; building of a residential block in Fili-Mazilovo
in Moscow (practices of the Main Administration for Housing
and Public Construction in the City of Moscow)] Stroitel'stvo
krupnopanel'nykh zhilykh domov po tipovomu proektu serii
1605A Instituta "Giprostroyindustriia"; zastroika zhilogo
kvartala v Fili-Mazilovo v Moskve (opyt Glavmosstroia). Mo-
skva, Gosstroizdat, 1961. 53 p. (MIRA 15:8)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut or-
ganizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroi-
tel'stva. Byuro tekhnicheskoy informatsii. 2. Glavnnyy kon-
struktor Instituta "Giprostroyindustriya" (for Rozenfel'd).
3. Rukovoditel' gruppy metodicheskikh kabinetov tresta
"Mosorgstroy" Glavnogo upravleniya po stroitel'stvu i
vosstanovleniyu zheleznodorozhnykh mostov (for Ezdrin).
(Moscow—Apartment houses)

LAVRETSKIY, L.N., inzh.; ORLOVSKIY, B.Ya., inzh.-arkh.; FINKINSHTEYN,
B.A., inzh.; EZDRIN, K.B., inzh.; UKRAINCHIK, M.M., inzh.,
red.

[One-story industrial building with no monitor and with a
flat roof and a large network of columns] Odnoetazhnoe bes-
fonarnoe promyshlennye zdanie s ploskoi krovlei i krupnoraz-
mernoi setkoj kolonn; iz opyta tresta "Mosstroi-5" Glavmos-
stroia. Moskva, Gosstroizdat, 1961. 72 p. (MIRA 15:9)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut orga-
nizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva.
Byuro tekhnicheskoy informatsii. 2. Zamestitel' upravlyayushchego
trestom "Mosstroy-5" (for Orlovskiy). 3. Starshiy prepodavatel'
Vsescouznnogo zaochnogo politekhnicheskogo instituta (for
Finkinshteyn). 4. Rukovoditel' gruppy metodicheskikh kabinetov
tresta "Mosorgstroy" Glavnogo otdeleniya po zhilishchnomu i
grazhdanskому stroitel'stvu v g. Moskve (for Ezdrin).
(Moscow--Factories--Design and construction)

SITNIKOV, Mikhail Aleksandrovich; kand.tekhn.nauk; UKRAINCHIK,M.M.,
inzh.,red.

[Precast reinforced concrete reservoirs with poststressed
walls; practices of the Experimental Construction Office of
the All-Union Research Institute for Water Maine (VNIIST),
of the "Stroideatal" Plant and the White Russian Transporta-
tion Construction Administration of the Ministry of Trans-
portation Construction of the U.S.S.R.] Sbornye zhelezobeton-
nye rezervuary s posleduiushchim napriazheniem stenok; iz
opyta Eksperimental'no-konstruktorskogo biuro Vsesoiuznogo
nauchno-issledovatel'skogo instituta po stroitel'stvu magis-
tral'nykh truboprovodov (VNIIST), zavoda "Stroideatal" i
Beltransstroia Ministerstva transportnogo stroitel'stva SSSR.
Moskva, Gosstroizdat, 1962. 23 p. (MIRA 17:2)

1. Nachal'nik tekhnicheskogo otdela tresta "Beltransstroy"
Ministerstva transportnogo stroitel'stva SSSR (for Sitnikov).

ZHUKOVSKIY, E.Z., inzh.; KOREKOVSEV, N.P., inzh.; UKRAINCHIK,
M.M., inzh., red.

[Precast monolithic reinforced concrete shells in the
form hyperbolic paraboloids for roofs of industrial
buildings; practices of the Krasnoyarsk Economic Coun-
cil and the State Design and Planning Institute of the
Leningrad State Design and Planning Institute] Sborno-
monolitnye zhelezobetonnye obolochki v vide giperboli-
cheskikh paraboloidov dlia pokrytii promyshlennyykh zda-
nii; opyt Krasnoyarskogo sovnarkhoza i GPI "Leninprom-
stroiproekt." Moskva, Gosstroizdat, 1962. 33 p.
(MIRA 17:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-
issledovatel'skiy institut organizatsii, mekhanizatsii i
tekhnicheskoy pomoshchi stroitel'stva. 2. Rukovoditel'
spetsial'nogo konstruktorskogo otdela Gosudarstvennogo
proyektnogo instituta "Lenpromstroyproyekt" (for
Zhukovskiy). 3. Glavnyy inzhener tresta "Krasnoyarsk-
shakhtstroy", g. Chernogorsk (for Korekovtsev).

MARKOV, Boris Glebovich, inzh.; EZDRIN, Konstantin Borisovich,
inzh.; UKRAINCHIK, M.M., inzh., red.

[Construction of covered markets using 40x40m double
curvature precast reinforced shells] Stroitel'stvo kry-
tykh rynkov s ispol'zovaniem sbornykh zhelezobetonnykh
obolochek dvoikoi krivizny razmerami 40x40 m. Moskva,
Gosstroizdat, 1962. 46 p. (MIRA 17:7)

1. Akademiya stroitel'stva i arkitektury SSSR. Nauchno-
issledovatel'skiy institut organizatsii, mekhanizatsii i
tekhnicheskoy pomoshchi stroitel'stva. 2. Glavnyy kon-
struktor otdela po proyektirovaniyu predpriyatiy torgovli
Gosudarstvennogo instituta po proyektirovaniyu predpriyatiy
torgovli i obshchestvennogo pitaniya Ministerstva torgovli
RSFSR (for Markov).

MEL'NIKOV, Yu.L., kand. tekhn. nauk; ZAKHAROV, L.V., inzh.;
KOLOKOLOV, N.M., inzh.; UKRAINCHIK, M.M., inzh., red.

[Joints of prefabricated reinforced concrete bridge
span structures] Styki sbornykh zhelezobetonnykh pro-
letnykh stroenii mostov. Moskva, Orgtransstroi, 1962.
79 p. (MIRA 17:7)

1. Laboratoriya zhelezobetonnykh mostov TSentral'nogo
instituta nauchno-tehnicheskoy informatsii mashino-
stroyeniya (for Mel'nikov, Zakharov, Kolokolov).

MIKHAYLOV, Vladimir Timofeyevich, inzh.; UKRAINCHIK, M.M., inzh.,
red.

[Mobile facilities for the technical servicing of
construction equipment] Peredvizhnye sredstva dlia tekhnicheskogo
obsluzhivaniia stroitel'nykh mashin. Moskva,
Gosstroizdat, 1963. 18 p. (MIRA 17:9)

1. Moscow. Nauchno-issledovatel'skiy institut organizatsii,
mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stu.
2. TSentral'noye normativno-issledovatel'skoye byuro "Orgtransstroy" Gosudarstvennogo proizvodstvennogo komiteta po
transportnomu stroitel'stu SSSR (for Mikhaylov).

LEVITAN, Ye.P., kand. tekhn. nauk; TARGANSKIY, N.L., inzh.;
EZDRIN, K.B., inzh.; UKRAINCHIK, M.M., inzh., red.

[Assembling precast reinforced concrete roofs for large-panel buildings; practices of the Main Construction Administration of the city of Moscow] Montazh stornykh zhelezobetonnykh krysh krupnopanel'nykh zdaniy; iz opyta Glavmosstroia. Moskva, Stroizdat, 1964. 31 p.

(MIRA 18:5)

1. Rukovoditel' sektora pokrytiy TSentral'noy laboratorii teplofizicheskikh issledovaniy elementov zdaniy Nauchno-issledovatel'skogo instituta stroitel'noy fiziki Gosstroya SSSR (for Targanskiy). 2. Glavnyy inzhener proyektov tekhnicheskogo otdela Instituta po proyektirovaniyu zhilishchno-grazhdanskogo stroitel'stva (for Ezdrin).

CHMYR', Vitaliy Dmitriyevich; UKRAINCHIK, M.M., nauchn. red.;
KASHANI, L.A., red.

[Laboratory and practical work in special methods for
plasterers] Laboratorno-prakticheskie raboty po spets-
tekhnologii dlia shtukaturov. Moskva, Vysshiaia shkola,
1965. 87 p. (MIRA 18:12)

UKRAINCIC, B.

Productivity of a brick-manufacturing enterprise. p. 1331.
(TEHNIKA, Vol. 9, no. 11, 1954. Beograd, Yugoslavia)

SO: Monthly List of East European Accessions, (MEAL), 1C, Vol. 4, No. 4,
Apr 1955, Uncl.

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CIA-RDP86-00513R001857910012-7

UKRAINCIC, Ernest

"Artificial drying sheds in the brick-making industry"

SO: TEHNika No 7, Year X, - 1955

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CIA-RDP86-00513R001857910012-7"

UKRAINCIC, E.

Managers, do you know the opinion of your collaborators? p. 1523

TEHNIKA, Beograd, Vol 10, No. 10, 1955

SO: EEAL, Vol 5, No. 7, July 1956

UKRAINCIK, E.

Review of diseases in a brick manufacturing enterprise. p. 1675
TEHNIKA, Beograd, Vol 10, No. 11, 1955

SO: EEAL, VOL 5, No. 7, July 1956

UKRAINC IK, E.

Construction of artificial drying kins in the brick industry. p. 776. TEHNIKA (Savaz inzenjera i tehnicara Jugoslavije) Beograd. Vol. 11, no. 5, 1956

SOURCE: East Europe Accessions Lists (EEAL),
Library of Congress, Vol. 5, no. 11, Nov. 1956

UKRAINCIC, E.

Coal in the brick industry. p. 1424.
(Tehnika, Vol. 11, no. 9, 1956. Beograd, Yugoslavia)

SO: Monthly List of East European Accessions. (EEAL) LC, Vol. 6, No. 7,
July 1957. Uncl.

UKRAINCIC, Ernest

The Drvolit slabs for building. Tehnika Jug 17 no.9:Suppl.
Organizacija rada 12 no.9:1824 S '62.

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7

UKRAINC IK, Ernest (Zagreb, Kosirnikova 58); VJENCESLAV, Faust (Zagreb)

Advantages of tunnel furnaces. Tehnika Jug 18 no. 12:
Supplement: Organizacija rada 13 no. 12: 2351-2353 D '63

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

UKRAINCIC, Ernest

Steatit as a means of rationalization. Tehnika Jug 18
no. 12: Supplement: Organizacija rada 13 no. 12: 2360-
2360a D '63

BOCHAROVA, L.P., UKRAINETS, N.S.

Effect of phosphorous organic insecticides ascorbic acid oxidase
[with summary in English]. Biokhimiia 23 no.3:388-389 My-Je '58
(MIRA 11:8)

1. Nauchnyy institut po udobreniyam i insektofungitsidam
Ministerstva khimicheskoy promyshlennosti SSSR, Moscow.
(OXIDASE,

ascorbic acid oxidase, eff. of phosphate insecticides
(Rus))
(PHOSPHATES, effects,
on ascorbic acid oxidases, insecticides (Rus))

USSR/General and Specialized Zoology - Insects. Harmful Insects and Acarids. Chemical Means in the Control of Harmful Insects and Acarids. P

Abs Jour : Ref Zhur Biol., No 6, 1959, 25408
Author : Popov, P.V., Bocharova, L.P., Ukrainets, N.S.
Inst : -
Title : The Insecticidal and Acaricidal Properties of Methylethylthiophos.
Orig Pub : V sb.: Organ. insectofungitsidy i gerbitsidy. M., Goskhimizdat, 1958, 39-42

Abstract : The toxicity of thiphos and methylethylthiophos was practically the same in experiments with the citrus mealybug, the storage weevil, the beet aphid and the Megalosiphum picridis aphid. Equitoxicical concentrations of these combinations differed not more than by 15-20%. The following was the comparative species resistance of the insects under experiment in descending order:

Card 1/2

USSR/General and Specialized Zoology - Insects. Harmful Insects
and Acarids. Chemical Means in the Control
of Harmful Insects and Acarids.

P

Abs Jour : Ref Zhur Biol., No 6, 1959, 25409

Author : Popov, P.V., Ukrainets, N.S.

Inst :

Title : The Insecticidal Property of Some Mixed Phosphates and
Thiophosphates.

Orig Pub : V sb.: Organ, insectofungitsidy i gerbitsidy. M.,
Goskhimizdat, 1958, 122-127

Abstract : As a result of determining the insecticidal properties
of 45 phosphates and thiophosphates synthesized in the
Scientific Institute of Fertilizers and Insecticides and
Fungicides, a table of the concentrations of the tested
compounds causing the total destruction of the storage
weevil beetle was offered. Only diethyl-L-nitrophenyl-
phosphate of these compounds was approximately equal to

Card 1/2

USSR/General and Specialized Zoology - Insects. Harmful Insects
and Acarids. Chemical Means in the Control of
Harmful Insects and Acarids.

P

Abs Jour : Ref Zhur Biol., No 6, 1959, 25429

Author : Bocharova, L.P., Popov, P.V., Ukrainianets, N.S.
Inst : -
Title : Sulfacid Esters as Acaricides

Orig Pub : V sb.: Organ. insektofungitsidy i gerbitsidy. M.,
Goskhimizdat, 1958, 257-261

Abstract : Among the studied chlorophenyl esters of methane- benzene- and chlorobenzene sulphonic acids in the control of Metatetranychus citri, only 4-chlorophenyl-4-chlorobenzene sulphonate is effective. Feasible admixtures to it (phenyl-, 2-chlorophenyl-, 2,4-dichlorophenyl- and 2,4,5-trichlorophenyl-4-chlorobenzene sulphonates) are practically ineffective in the control of acarids. In distinction from the acaricides of the thiophos type and

Card 1/2

USSR/General and Specialized Zoology - Insects. Harmful Insects
and Acarids. Chemical Means in the Control of
Harmful Insects and Acarids.

P

Abs Jour : Ref Zhur Biol., No 6, 1959, 25433

Author : Popov, P.V., Bocharova, L.P., Ukrainets, N.S., Sedykh, A.S.
Inst : -
Title : Contact and Intraplantar Insecticide Action of the
Systox Group Compounds.

Orig Pub : V sb.: Organ. insektofungitsidy i gerbitsidy, M.,
Goskhimizdat, 1958, 13-25

Abstract : Of the systox group compounds, thiol isomer (I), mercaptophos (M), commercial M and thionic I and M, methylmercaptophos and methylethylmercaptophos possess the greatest contact toxicity and most lasting protective effectiveness. To obtain an identical toxic and protective effect, the concentration of the designated thionic M should be $1\frac{1}{2}$ - $2\frac{1}{2}$ times greater than I and commercial M;

Card 1/2

MEL'NIKOV, N.N.; MANDEL'BAUM, Ya.A.; SHVETSOVA, K.D.; BAKANOVA, Z.M.
LOMAKINA, V.I.; ZAKS, P.G.; MIL'SHTEYN, I.M.; POPOV, P.V.;
POKROVSKIY, Ye.A.; BOCHAROVA, L.P.; SEDYKH, A.S.; UKRAINETS, N.S.

Improved technology for producing thiophos, metaphos, chlorophos
and other phosphorus organic insecticides and investigation of
new insecticides and fungicides derived from the esters of
phosphoric acids. [Trudy] NIUIF no.164:11-14 '59. (MIRA 15:5)
(Insecticides) (Fungicides)

BEZUGLYY, S.F.; AKIMOV, B.A.; POPOV, P.V.; UKRAINETS, N.S.; BOCHAROVA, L.P.

Physicochemical investigations of the wettable powders of different
insecticides in order to improve the methods of their production.
[Trudy] NIUIF no.164:32-34 '59. (MIRA 15:5)
(Insecticides)

MEL'NIKOV, N.N.; ZUBOV, M.F.; TRUNOV, P.N.; SANIN, M.A.; FEDOSEYENKO, L.Z.;
UKRAINETS, N.S.; PIVOVAROVA, T.M.

Fungicide for controlling powdery mildew fungi. Zashch. rast. ot
vred. i bol. 8 no.1:31 Ja '63. (MIRA 16:5)
(Fungicides) (Mildew)

ZUBOV, M.F.; SANIN, M.A.; FEDOSEYENKO, L.G.; UKRAINETS, N.S.; PIVOVAROVA, T.M.; MATVIYEVSKIY, kand.biolog.nauk; ROSLAVTSEVA, S.A.

From practices in the use of poisonous chemicals. Zashch. rast. ot vred. i bol. 8 no.11:23-24 N '63. (MIRA 17:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy. (for all, except Matviyevskiy). 2. Mle-yevskaya opytnaya stantsiya sadovodstva im. L.P.Simirenko, Cherkasskaya obl., Gorodishche (for Matviyevskiy).

ZUBOV, M.F.; SANIN, M.A.; FEDOSEYENKO, L.G.; UKRAINETS, N.S....

Preparations of fungicidal effect. Zashch. rast. ot vred. i bol.
9 no.1:28 '64. (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
sredstv zashchity rasteniy.

UKRAINETS, V.P.; PARKHOMENKO, I.I.

Mechanizing the purification of poppy and small-seed
medicinal plants. Med. prom. 16 no.1:39-41 Ja '62. (MIRA 15:3)

1. Ukrainskaya zonal'naya opytnaya stantsiya lekarstvennykh
rasteniy.

(BOTANICAL DRUG INDUSTRY)

UKRAINETS, V.S.

Problem of the therapy of dislocations in Lisfranc's joint. Ortop.,
travm. i protez. 21 no.8:62-64 Ag '60. (MIRA 13:11)

1. Iz Kiyevskogo nauchno-issledovatel'skogo instituta ortopedii i
travmatologii (direktor - dotsent I.P.Alekseyenko, nauchnyy rukovoditel' -
chlen-korrespondent AMN SSSR prof. F.R.Bogdanov).
(FOOT—DISLOCATION)

BOGDANOV, F.R., prof.; FARNIYEVA, I.V., kand. tekhn. nauk; PUTILOVA, A.A., kand. med. nauk; BABAYEV, E.A., starshiy nauchnyy sotrudnik; LISENKO, Ye.F., mladshiy nauchnyy sotrudnik; UKRAINETS, V.S., mladshiy nauchnyy sotrudnik

Basis for construction of rational prophylactic footwear for young children. Ortop., travm. i protez. 25 no.2:13-20 F '64.

1. Iz Ukrainskogo instituta ortopedii i travmatologii (direktor - dotsent I.P.Alekseyenko) i Ukrainskogo instituta kozhevenno-obuvnoy promyshlennosti (direktor - kand. tekhn. nauk G.V.Livyy). Adres avtorov: Kiyev, ul. Vorovskogo, d. 27, Institut ortopedii i travmatologii. (MIRA 18:1)

ACC NR: AT7006971

SOURCE CODE: UR/2650/66/000/025/0100/0105

AUTHORS: Ukrainskaya, V. S.; Baydal, M. Kh.

ORG: none

TITLE: Role of the circulation pole in the recurrence and intensity of northern incursions in northern Kazakhstan

SOURCE: Alma-Ata. Kazakhskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut. Trudy, no. 25, 1966. Voprosy meteorologii (Problems in meteorology), 100-105

TOPIC TAGS: atmospheric front, atmospheric circulation, weather forecasting

ABSTRACT: An explanation is given of the role played by variation in position of the circulation pole on the recurrence and intensity of northern incursions into masses, normally formed in anticyclonic pressure systems and entering Kazakhstan from the north (northwest to northeast), causing a drop of 7° or more for 3 or more days at 11 stations in northern Kazakhstan. Incursions of this kind for the years 1956--64 have been tabulated according to type of circulation (using Vangeigeym's classification). The number of incursions corresponding to different positions of the circulation pole, the probability of positive or negative air-temperature anomalies

Card 1/2

ACC NR: AT7006971

with incursions of cold relative to position of the circulation pole, and the recurrence of different values of negative air-temperature anomalies relative to position of the circulation pole have been considered. From such comparisons it is concluded that the position of the circulation pole is essential, in addition to the standard elements of weather, for reliable prediction of extreme cooling during synoptic periods and of the sign and value of air-temperature anomalies in northern Kazakhstan. Orig. art. has: 4 tables.

SUB CODE: ob/ SUBM DATE: none/ ORIG REF: 008

Card 2/2

UKRAINSKIY, A.B.

USSR/General Biology - Individual Development.

B-4

Abs Jour : Ref Zhur - Biol., No 15, 1958, 66744

Author : Ukrainskiy, A.B.

Inst : Stalinabadsk. Med. in-ut.

Title : Two Rare Cases of a Double Malformation.

Orig Pub : Tr. Stalinabadsk. med. in-ta, 1955, 14, 115-118

Abstract : The author describes two cases of a double malformation of dicephalus dibrachium belonging to the duplicitas anterior type. The first case is a full-term stillborn two-headed female foetus. The second case is a still born, premature ($8\frac{1}{2}$ months) two-headed female foetus. In both cases the foetus had two upper and two limbs. Data on the anatomical study and the X-ray pictures are furnished.

Card 1/1

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L 11939-63

EWT(1)/EWG(K)/BDS/EEC(b)-2/ES(w)-2 AFFTC/ASD/ESD-3/AFWL/
SSD P4-4/Po-4/Pab-4/Pz-4 AT/IJP(C)

ACCESSION NR: AP3003967

S/0039/63/015/001/0003/0006

AUTHORS: Bakayev, I. I.; Zalesskiy, Yu. G.; Nazarov, M. I.; Ukrainskiy, A. M.;
Tolok, V. T.

TITLE: Ion cyclotron resonance in a moving plasma

SOURCE: Atomnaya energiya, v. 15, no. 1, 1963, p-6

TOPIC TAGS: ion cyclotron resonance, moving plasma, pinch, plasma density, Doppler effect

ABSTRACT: In the heating of a stationary plasma by means of an ion cyclotron resonance, the time required for a considerable acceleration of plasma ions is not more than 10^{-5} sec. Therefore for the pinches moving with a velocity of 10^7 cm/sec, the length of the heating section is not unreasonable (about 1m.). In the present work, the generation and absorption of ion cyclotron waves in a moving plasma pinch has been observed. The absorption of high frequency energy occurred at two frequencies shifted to both sides from a certain average frequency, because of Doppler effect. "Magnetic shores" are important for the damping of ion cyclotron waves. By measuring the Doppler effect and the resonance frequencies, the average velocity of the pinch was found (6.7×10^6 cm/sec), and the plasma density (7×10^{12} cm $^{-3}$).

Card 1/2

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L 11939-63

ACCESSION NR: AP3003967

"The authors express their deep gratitude to K. D. Sinel'nikov for discussion of
the results". Orig. ext. has: 5 figures and 5 equations.

ASSOCIATIONS: none

SUBMITTED: 22Sep62

SUB CODE: PH

DATE ACQ: 08Aug63

ENCL: 00

NO REF Sov: 002

(FILER: 002)

Card 2/2

USSR / General Biology - Individual Development. B
Abs Jour: Ref Zhur-Biol., No 9, 1958, 38023.
Author : Ukrainskiy, A. V.
Inst : Not given.
Title : A Rare Case of Congenital Deformity - Monodactylous Upper, and Claws on Lower, Extremities.
Orig Pub: Tr. Stalinabadsk. med. in-ta, 1955, 14, 111-114.
Abstract: No abstract.

Card 1/1

15

ACC NR: AP6019018

the sample is not dissolved, then the solution is cooled, 0.5 g of nitroso is added and the mixture is heated up to the beginning of liberation of $N_2S_2O_4$ vapors without permitting precipitation. The cooled solution is transferred into a 100 ml measuring flask, 0.5 N H_2SO_4 solution is gradually added, 1 ml of perhydroxyl is poured in, and the content is brought to the mark with the same acid. An aliquot part of the solution is then placed in a titrating glass and neutralized with 10% solution of NaOH until a weak, yellowish-green color appears. Then 7-10 ml of 1 N H_2SO_4 and 25 ml of 0.05 M complexon III are added. After 10 minutes, 3-5 drops of 0.5% xylenol orange are added and the excess of complexon is titrated with a 0.05 M solution of Bi nitrate prepared from metallic Bi and 0.5 N HNO_3 . A green filter is used. The equivalent point is found graphically. The Ti content is calculated from the following formula:

$$\%Ti = \frac{(V_1k_1 - V_2k_2)47.9 \cdot 0.05 \cdot 100 \cdot 100}{gV_a \times 1000} \quad \text{where } V_1 \text{ is the volume of the complexon added, } V_2 \\ \text{is the amount of Bi nitrate consumed, } k_1 \text{ and } k_2 \\ \text{are correction coefficients, } V_a \text{ is the volume of}$$

aliquot, and g is the weight of the sample. Orig. art. has: 1 fig. and 1 formula.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 002

WKSHE, C.A.

USSR:

5194 Mechanism of Electropolymerization of Chromic P. A.

L. Levin, A. I. Polikarpiw, N. A. Uspenskii, and G. M. Hyslop

Henry Butcher Translated by J. R. D. (From Doklady)

Henry Butcher Translated by J. R. D. (From Doklady)

Archiv für Metallkunde, No. 1, 1958, p. 110-120.

Henry Butcher, Altenbeck, Calif.

Previously extracted from Chem. Abstr., Vol. 51, No. 11082, p. 3,

Aug. 1954.

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ISSR

The effect of surface-active materials on the electrode potential. A. I. Levin, R. A. Ukshe, and V. S. Kolyatova (S. M. Kirov Uralt Polytechnic Inst., Sverdlovsk). Doklady Akad. Nauk S.S.R. 87, No. 404 (1952). — The effect of adding small amounts (50–100 mg./l.) of surface-active materials on the electrode potential was studied for Cu and Zn electrodes. Triton B, sulfoalicylic acid, and ammonium acid produced a significant shift of the electrode potentials of Cu to higher pos. values. Surface-active cations, neutral molts., and anions such as Li^+ , PbO_2^- , and CaO_2^- had no effect. The potential of the Zn electrode was shifted toward higher pos. values by surface-active cations (stearidutyliquor-modium) and neutral molts. (coetanol and eutapher). Surface-active anions had no effect on the potential. The change in potential owing to the presence of surface-active substances was observed at the first stage of time despite their low concentration.

UKSHE, Ye.

Dissertation: "Investigation of the Influence of Various Factors on the Electrolytic Precipitation of Copper From Complex Solutions." Cand Tech Sci, Ural' Polytechnic Institute, Sverdlovsk, 1953. (Referativnyy Zhurnal-Khimika, No 10, Moscow, May 54)

SO: SUA 313, 23 Dec 1954

back side, L.H.
UNCLASSIFIED
[Handwritten signature]

Cathode polarization on precipitating copper from complex electrolytes. A. I. Levin and E. A. Uralie (S. M. Kirov Urals Polytechnic Inst., Tverdak), 3300114 SSSR po Obshchiu Khim. Akad. Nauk S.S.R. 2, 798-809 (1963).—Cathode polarization is measured for pptn. of Cu from its complexes with pyrophosphate (I), oxalate (II), thiosulfate (III), Na ethylenediaminetetraacetate (IV), salicylate (V), and NH₃ (VI), alone or in pairs. In I, II, III, and IV, cathode polarization depends chiefly on chem. reactions; in V and VI, on concen., complicated in the case of V by formation of a passive film on the cathode. The most probable cathode process is direct reduction of the complex ions. A small increase in concen. of the complex-forming group lowers the electrode potential.

H. M. Leicester

11K565 EA
Vol. 43 Iss. 5
Mar. 25, 1954
Electrochemistry

(3) Reduction during electrodeposition of copper

and under polarization. The cathodic current density was 0.3-0.4 A at $i = 1$ and had a complicated dependence on i , probably because a salt coating formed on the cathode. In NH₃ alone, ΔP_{red} was very small and seemed to be due to

complex ions into the metal lattice. The instantaneous values of the complexes, calculated from the equil. potentials and the elec. cond., were for $[\text{Cu}(\text{P}_2\text{O}_7)]^{4-}$ 1.3×10^{-6} , $[\text{Cu}(\text{P}_2\text{O}_7)]^{2-}$ 1.2×10^{-6} , $[\text{Cu}(\text{C}_2\text{O}_4)]^{4-}$ 1.2×10^{-4} , $[\text{Cu}(\text{SO}_4)]^{2-}$ 1.5×10^{-4} , Cu salicylate complex 1.5×10^{-2} , $[\text{Cu}(\text{NH}_3)]^{+2}$ 4.1×10^{-12} , and $[\text{Cu}(\text{NH}_3)]^{+4}$ 7×10^{-12} . J J B

LEVIN, A.I., professor, doktor tekhnicheskikh nauk; POMOSOV, A.V.; KOLE-VATOVA, V.S.; GUREVICH, I.Ye.; ~~UKSHE~~, Ye.A.; ROGATKINA, N.T.; MOKRUSHIN, S.G., professor, doktor tekhnicheskikh nauk, retsenzant.

Corrosion and metal cladding. Sbor.st.Ural. politekh.inst. no.13:3-174 '53.
(Corrosion and anticorrosives) (Metal cladding)

and were shifted in the position as far as possible.

tion of oxidation. The above changes in E were temporary; in 30-180 min. E reached the same values irrespective of the addn., indicating that the addns. merely retarded the establishment of the normal corrosion potential. In PbO_2^- soln. E was unstable; cations made E more neg., with further shift in neg. direction with time. Cathodic

curves in electrodeposition of Cu from Cu^{2+} soln. and of Zn from acid SO_4^{2-} soln. indicated that II and

*Section II. Permanganate. It is well known that
it retard the discharge of cations, which may be explained
by the pos. charge of the adsorbed ions and cations. Com-
bined with a white reducing liquor, it retards
electrodeposition of Cu with an improvement in the
post quality more than additive. This effect was re-
peated also by a more than additive mixture of the pos.
cation. II. Influence of impurities and additives on elec-
trodeposition of Cu. (See also the section I, Part C.)*

Cath. properties will be better with mixture of CuCl₂ and HgCl₂.

*and 29.0 g. 3 naphthol, 1.0 g. glue impurities and 0.2
g. St. The cathode of cathodic surface was prepared by
the same way as in the case of the cathode of anode of the
cell. The cathode of anode of the cell was cleaned by the same*

*method as the cathode of anode of the cell. The cathode of the
anode was cleaned by the same way as the cathode of the cathode.*

*By glue especially strong cathodic current was obtained by
plating the cathodic effect exhibited by glue on cathode - 7/7*

Lavin, H., Peleg, A.Y., Kolevsky, I.S., Gurevich, I.E.,

administering 100 mg. of β -adrenergic blocking agent and 100 mg. of up-to-date experimental tricyclic psychotropic agent. Schizotypal patients had little difficulty in taking the medicated drugs. The change of total serum bilirubin was 1.1 mg. and 1.4 mg. in the patients who were given the drugs respectively. There was no significant difference between the two groups. The side effects of the drugs were not serious. No toxicosis was observed in all the patients.

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"APPROVED FOR RELEASE: 03/14/2001

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APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

UKSHE, E.A.

USSR

Mechanism of discharging of copper from electrolytes containing complex pyrophosphates. A. I. Levin, E. A. Ul'ichev, and N. S. Urylina. Doklady Akad. Nauk S.S.R. 58, 597-700(1953).—The authors studied the lack of a major difference in electrochem. properties between hydrated and complex ions during electrodeposition of Cu. The caps. were carried out on a water soln. of CuSO_4 and $\text{Na}_4\text{P}_2\text{O}_7$ (I) with a Cu cathode. The pyrophosphate complex ions in such solns. are less stable than, e.g., cyanide complex ions. When changing the potential from +0.10 to -0.25 v. it was found that polarization curves show the following behavior: (a) when the potential reaches approx. +0.11 v. ("zero point") there is a decrease in amp. accompanied by an increase in polarization; (b) the max. current, at which the decrease takes place, is greater when the concn. of CuSO_4 is greater and when the concn. of I is smaller, i.e. when the ratio $[\text{P}_2\text{O}_7^{4-}]/[\text{Cu}^{++}]$ is smaller; (c) after reaching a min. value the current begins to rise again, the rise being faster when the concn. of CuSO_4 is greater and when the concn. of I is smaller. E.g.: for CuSO_4 0.0115 and for I 0.0160 g. mol/l. the amp. change from 0 to 8.5×10^{-3} while the v. change from +0.10 to -0.05; the zero point is at +0.11 v. and 7×10^{-3} amp. It is apparent that the potential at the max. point of the polarization curves is in-

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A. T. LOVIN

dependent of concn. of CuSO_4 or I and is approx. equal to -0.11 v. If the concn. of I is so high that the equill. potential of the Cu electrode is more neg. than -0.11 v., then the polarization curves have neither max. nor min. E.g. for CuSO_4 , 0.0075 and for I 0.045 g. mol/l , amp. change from 0 to 8.5×10^{-4} while the voltage change is from +0.04 to -0.25. In a similar manner in very dil. solns. contg., however, a certain small excess of I there are no max. or min. The current at the zero point should increase when the concn. of Cu increases; on the other hand, a decrease in the concn. of I apparently eases the supply of Cu^{++} to the cathode, thus increasing at the same time the current at the zero point. Neither vigorous agitation nor change of temp. by 5° had any effect on the above results. Substitution of Cu_2O by $\text{Cu}(\text{NO}_3)_2$ increases only the potential of the zero point to 0.12 v. Expts. with other complex ions $\text{CuSO}_4 + \text{NaCH}_2\text{CH}_2\text{COO})_2\text{N}_2(\text{CH}_3)_2$, $\text{CuSO}_4 + \text{Na}_2\text{C}_2\text{H}_4\text{O}_2$, and $\text{CuSO}_4 + \text{Na}_2\text{C}_2\text{O}_4$ did not give pos. results. Addn. of Na₂citrate to the soln. of $\text{CuSO}_4 + \text{I}$ flattens the polarization

P. J. Hendzel--

UKSHE, YE. A.

USSR.

✓ Relation between zero point and mechanism of electro-deposition of copper from pyrophosphate solutions. A. I. Levin and E. A. Ukleie (S. M. Kirov Ural Polytech. Inst., Sverdlovsk). Dokl. Akad. Nauk S.S.R. 89, 1045-8 (1953).—Cathodic polarization curves of Cu at c.d.s up to 2 ma./sq. cm. were taken at 25° in a soln. of 0.2M CuSO_4 and 0.5M $\text{Na}_2\text{P}_2\text{O}_7$, in the absence and in the presence of several surface-active or complexing agents. 2-Naphthol, which is adsorbed as its electrically neutral mol., as well as adsorbable anions, such as anthranilic acid and Triton B, had little influence on polarization. Complexing agents, such as $\text{Na}_4\text{C}_6\text{O}_4$, Na citrate, and $\text{KNaC}_6\text{H}_5\text{O}_2$, also did not influence the polarization. The cationically adsorbed N^+Bu_4^+ , introduced as iodide, increased the cathodic polarization considerably. At const. c.d. the polarization increased asymptotically with concn. of N^+Bu_4^+ , indicating that the effect is adsorptive. The free-electrode potential (I) of Cu was 0.0 v. on the H scale, thus neg. to the zero point which is at +0.11 v. in this scale; this explains why cations, but not anions, influence the polarization. The rate of establishment of I of Cu in solns. of $\text{P}_2\text{O}_7^{4-}$ of various concns. was influenced by the surface-active agents. In solns. where I was above +0.11 v., that is pos. to the zero point, the anionic Triton B was most efficient. Below this point, N^+Bu_4^+ was more efficient, while 2-naphthol took an intermediate position.

Andrew Dravnick

Ukshe, E. A.

USSR.

[Concentration changes in the pre-electrode layers of a copper pyrophosphate bath. A. I. Levin and E. A. Ukshe. *Doklady Akad. Nauk S.S.R.*, 91, 119-22 (1953).] Electrolysis at high current of a soln. contg. CuSO₄ and Na₄P₂O₇ produced crystallites of Na₄P₂O₇ on the cathode and insol. Cu₃P₂O₇ on the Cu anode. The cathode effect was attributed to the reduction of Cu(P₂O₇)₄⁴⁻. A soln. contg. 0.2M CuSO₄ and 0.434M Na₄P₂O₇ was examd. by the Hittorf method with 6 mA. The passage of 0.015 Faradays yielded: 0.473M P₂O₇⁴⁻ in the catholyte, 0.434M P₂O₇⁴⁻ in the center space, and 0.420M P₂O₇⁴⁻ in the anolyte. These data confirmed an analysis of concn. changes based on transference nos. and conductivities of CuSO₄ and Na₄P₂O₇ solns. The fraction of current carried by the complex Na₄[Cu(P₂O₇)₄] was approx. 0.41. Passivity on the anode can be eliminated by adding Na K tartrate, Na citrate, or Na tartarate. The complexing agents do not influence the cathode but help to stabilize the anode layer. R. D. Misch.]

Ural Polytech. Inst. im. Kirov

Ukshe, Ye. A.

USSR

Influence of adsorption of cations on electrodeposition of copper from pyrophosphate electrolytes. E. A. Ukshe and A. I. Levin (S. M. Kirov Ural Polytech. Inst., Sverdlovsk). Doklady Akad. Nauk S.S.R. 92, 793-801 (1953); cf. C.A. 48, 13486g; preceding abstr. Four different cases can be distinguished in action of surface-active substances during electrochemical reactions of ions at the cathode. The rate of cathodic process is described by: $i = kC \exp(-\alpha l/n(E - \psi_1)/RT) \exp(-nF\psi_1/RT)$ where: i = c.d.; k , α are const. coeffs.; C is vol. concn. of ions to be discharged; E is electrode potential; ψ is the jump of the potential at distance of one ionic radius from the surface of the cathode; n , ion valence with proper sign; F = Faraday; T = abs. temp. In discharge of cations: (1) if $\psi_1 < 0$, that is, neg. to the zero point, cations are adsorbed, ψ_1 moves in pos. direction, and i decreases; (2) at $\psi_1 > 0$, mainly the surface-active anions are adsorbed, and i increases. In discharge of anions: (1) if $\psi_1 > 0$, anions are adsorbed and i decreases; (2) if $\psi_1 < 0$, cations are adsorbed, and ψ_1 shifts in pos. direction. The last case is encountered in electrodeposition of Cu from $\text{Cu}(\text{P}_2\text{O}_7)_2^{1-}$ solns. It was, therefore, expected that NBu_4^+ should decrease polarization. The opposite was observed. Polarization was increased also by K^+ but decreased by $(\text{NBu}_4)_2\text{SO}_4$. Thus, I^- and not NBu_4^+ was responsible for increase in the polarization by NBu_4^+ . With the sulfate salt, the polarization increased asymptotically with concn., as expected if it were an adsorption effect. Also, the polarization curves, plotted in ΔE vs. $\log i$ coordinates for various concns. of the sulfate, were parallel.

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Indicating that the polarization is caused by a change of ψ_1 with concn.

Andrew Dravitsky

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7

UKSHE, E. A., FALICHEVA, A.I., LEVIN, A. I. and BRYLINA, N. S.

"Mechanism of Electrodeposition of Chromium," Dokl. AN SSSR, No. 1, pp 105-108,
1954.

Abstract A-44434, 12 Aug 1955.

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

UKSHE, E. A.

USSR/Chemistry - Physical chemistry

Card 1/1 : Pub. 147 - 10/21

Authors : Ukshe, E. A., and Levin, A. I.

Title : About the effect of admixtures on the electrodeposition of Cu from a pyrophosphate electrolyte

Periodical : Zhur. fiz. khim. 8, 1434-1438, Aug 1954

Abstract : The effect of Pb and Fe admixtures on the cathode process of Cu-deposition with a pyrophosphate electrolyte, was investigated. The effect of J⁻, Cl⁻ and Br⁻-admixtures on the performance of a copper-pyrophosphate electrolyte, was determined. The quality of the cuprous precipitates was investigated visually, the flux yield by means of Coulomb meter and the electrode potentials by means of a special calibrated cathode voltmeter. Results are given in tables. Eight references: 5-USSR and 3-USA (1944-1953). Tables; graphs.

Institution : The S. M. Kirov-Ural Polytechnicum, Sverdlovsk

Submitted : October 5, 1953

UKSHE, E. A.

USSR/Chemistry

Card 1/1

Authors : Ukshe, E. A.; and Levin, A. I.

Title : The composition and properties of a complex electrolyte of a cupric-pyrophosphate bath.

Periodical : Zhur. Ob. Khim. 24, Ed. 5, 775 - 780, May 1954

Abstract : The problem concerning the composition of complex ions in a real pyrophosphate electrolyte suitable for galvanic copper plating was studied. The instability constants of copper pyrophosphate complexes were measured by the potentiometric method. Values were established for $K_1 = 0.63 \cdot 10^{-6}$ and for $K_2 = 0.5 \cdot 10^{-10}$. The dependence of the electro-conductivity of the $\text{CuSO}_4 - \text{Na}_4\text{P}_2\text{O}_7 - \text{H}_2\text{O}$ system on the concentration of components was investigated and the bend observed in the electro-conductivity curve indicated a complete transformation of the copper into a complex ion. Ten references. Tables, graphs.

Institution : The S. M. Kirov Polytechnical Institute, Ural

Submitted : October 6, 1953

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7

U.S.S.R.

U.S.S.R.

Composition and properties of the complex electrolyte in
a copper phosphate bath. R. A. Uteshe and A. I. Vin
J. Russ. Chem. Soc. 21, 15100 (1909). H. J. H.

good

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

UKSHE, E.A.

USSR/Chemistry - Electrodeposition

Card 1/1 Pub. 147 - 17/26

Authors : Levin, A. I.; Ukshe, E. A.; and Kolevatova, V. S.

Title : Effect of surface-active substances on the electrodeposition of metals

Periodical : Zhur. fiz.khim. 28/1, 116-126, Jan 1954

Abstract : The effect of surface-active substances on the electrode potentials in the absence of current was investigated. The position of the zero point of the metal and its effect on the change of the equilibrium potentials with time was determined. It was established through study of the effect of surface-active substances on the electrode polarization that such substances have highly inhibiting effect on the cathod process. Nineteen USSR references (1919-1953). Tables; graphs.

Institution : The S. M.Kirov-Ural Polytechnicum, Sverdlovsk

Submitted : March 28, 1953

LURSNE E.A.

This effect of additives on the electrodeposition of copper from a pyrophosphate bath. E. A. Ukshe and A. I. Levin (S. M. Kirov Naval Polytech. Inst., Leningrad), Zhur. (S. M. Kirov Naval Polytech. Inst., Leningrad), Nauk. Fiz. Khim. 28, 1434-8 (1954); cf. Doklady Akad. Nauk S.S.R. 89, 1015 (1953); Kanzyskii, C. I. 48, 134934. The cathodic polarization ΔE of Cu in 0.2M $CuSO_4 + 0.5M Na_3P_2O_7$ was lowered by 0.05 v. when 0.005-0.02 g-equiv. $PbSO_4$ or 0.002-0.01 g-equiv. $Pb(OAc)_2$ was added to a 1. soln.; this lowering was almost independent of the concn. of the addts. and slightly dependent on the e.d. current. The deposit contained Fe or Pb, resp. KCl (10-50 mg/l.) lowered ΔE by 0.1-0.15 v.; KBr had no effect on ΔE , and KI lowered ΔE by as much as 0.05 v., probably because of the formation of colloidal CuI . All halide ions caused deterioration of the Cu deposit. J. J. Bikerman

Ukshe, E. A.

USSR/Physics - Complex ions

Card 1/1 Pub. 147 - 22/25

Authors : Levin, A. I., and Ukshe, E. A.

Title : About the nature of complex ions participating in a cathode process

Periodical : Zhur. fiz. chim. 28(10) 1854-1861 Oct 1954

Abstract : Literature and experimental data are presented showing that the electro-crystallization of metals from their own complex salt solutions takes place as result of direct reduction of the complex ions or molecules on the cathode followed by simultaneous separation of the metal. It is shown to be perfectly possible in the presence of a cupric pyrophosphate complex $\text{Cu}(\text{P}_2\text{O}_7)_2^{6-} + 2e \rightarrow \text{Cu} + 2\text{P}_2\text{O}_7^{4-}$ or a cyanine complex electrolyte $\text{Ag}(\text{CN})_2^- + e \rightarrow \text{Ag} + 2\text{CN}^-$. Many facts confirming the mechanism of electrode reactions are cited. It is pointed out that a solution containing complex ions of any given metal and a specific surplus of the complex forming agent may have numerous complex ions regardless of the fact that the total concentration of the ions may be relevant in the given solution. Nine references: 8-USSR and 1-German (14c-15d).

Institution : The S. M. Kirov-Ural Polytechnicum, Sverdlovsk

Submitted : February 15, 1954

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7

UKSHE, E.A.

The Mechanism of Electrodeposition of Chromium A.Y.

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

UKSHE, E.A.

✓ 2493* Connection Between the Potential of Zero Charge and
Physical-Chemical Characteristics of Metals. O sviezi mezhdu
potentsialom nulevogo zariada i fiziko-khimicheskimi khar-
akteristikami metallov. (Russian.) V. M. Novakovskii, E. A.
Ukshe, and A. I. Levin. Zhurnal fizicheskoi khimii, v. 21, no.
10, Oct. 1955, p. 1847-1853.

MG
On the basis of contemporary theory of electrode potential,
equations are derived which relate the potential of zero charge
with other physical-chemical characteristics. Tables, 13 ref.

(2)

UKSHE Ye. A.

AID P - 2777

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 5/19

Authors : Ukshe, Ye. A. and A. I. Levin

Title : Characteristics of the cathodic process in a copper pyrophosphate cell

Periodical : Zhur. prikl. khim. 28, 4, 388-393, 1955

Abstract : With an increase in the amount of copper contained in the electrolyte, the current efficiency of copper increases. Four basic types of cathodic deposits are described. One table, 4 diagrams, 13 references (12 Russian: 1939-1953).

Institution : Electrochemical Laboratory of the Ural Polytechnic Institute im. S. M. Kirov.

Submitted : 06, 1953

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7

Ukshet, E.A.

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857910012-7"

UKSHE, Ye. A.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 12/21

Authors : Novakovskiy, V. M.; Ukshe, Ye. A.; and Levin, A. I.

Title : Relation between zero charge potential and the physico-chemical properties of metals

Periodical : Zhur. fiz. khim. 29/10, 1847-1853, Oct 1955

Abstract : The difference between a normal potential and a zero charge potential which is an intrinsic characteristic of a metal electrode, is described. Employing the modern theory of electrode potentials the authors formulated certain equations which prove a definite relation between the zero charge potential and the physico-chemical properties of metals. The physical sense of the constants included in some of the equations is explained. Thirteen references: 11 USSR, 1 USA and 1 Germ. (1937-1954). Tables.

Institution : Ural Polytechnic Inst. im. S. M. Kirov and the Ural Chem. Inst. Sverdlovsk

Submitted : February 15, 1955

UKSHE, E. A.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 27/49

Authors : Ukshe, E. A., and Levin, A. I.

Title : Combined deposition of copper and hydrogen during the electrolysis
complex solutions

Periodical : Dok. AN SSSR 100/5, 943-946, Feb 11, 1955

Abstract : The results obtained in studying the mechanism of Cu electrodeposition
in complex solutions are described. The laws governing the combined
metal and hydrogen deposition are explained. The possibility of applying
the O. A. Esin method to the study of the kinetics of electrode processes
during metal deposition in complex electrolytes is debated. It was
found that the characteristics connected with the lamellar growth of
crystals and with the change in the actual active surface due to current
density are of lesser importance in the case of complex electrolytes
than in the case of metal deposition in concentrated simple salt
solutions. Eight references: 7 USSR and 1 USA (1929-1953). Graphs.

Institution : The S. M. Kirov Ural Polytechnicum

Presented by: Academician A. N. Frumkin, July 12, 1954

UKSHE, E.A.

Rept. Chem.
2

The potential for the null charges of copper and chromium.
E. A. Ukshe and A. I. Levin. *Doklady Akad. Nauk S.S.R.*
52, 105-119-22 (1955).—A few preliminary results were
obtained for the 0 potential by relating the contact angles
of gas bubbles to the electrode potential. The contact
angle changed between 0.01 and 0.0° v. for Cu, and 0.02
and 0.04 v. for Cr by 20-40°, and were readily observed
even in visual observations. The contact-angle curves
differed, however, in shape from the usual electrocapillary
curves. In this method, the proper electrode prepn. was
crit. and described in detail. From the results obtained,
4.89 e.v. as the work of electron escape from Cu and 4.37
e.v. for Cr seemed justified. W. M. Sternberg

PM

UKSHE, Ye.A.; LEVIN, A.I.

~~SECRET~~
Composition of the pyrophosphate copper bath; discussion.
Zhur. ob. khim. 26 no. 9:2657-2659 S '56. (MLRA 9:11)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova.
(Copper pyrophosphates)

5(4)

SOV/20-124-2-36/71

AUTHORS: Pushkareva, S. A., Ukshe, Ye. A.

TITLE: The Behavior of a Sulphate Ion in the Electrolytic Production
of Magnesium (Povedeniye sul'fat-ions pri elektroliticheskem
poluchenii magniya)PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 2, pp. 370-372
(USSR)ABSTRACT: When a sulphate ion is introduced (in form of $MgSO_4$) into a
chloride solution containing metallic magnesium, the electro-
lyte becomes blue and the intensity of coloring increases with
an increase in the quantity of the introduced admixture. With
a view of finding the cause of this coloring the authors car-
ried out a series of experiments concerning the influence
exercised by various sulphurous compounds on the coloring of
the electrolyte. The experiments were carried out with quartz
ampoules in argon atmosphere and gave the following results:
1) The introduction of magnesium sulphate into a $MgCl_2 + KCl$
solution containing no metallic magnesium (or in the case of
the presence of solid magnesium, $t < 650^\circ$) causes no coloring.

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SOV/20-124-2-36/71

The Behavior of a Sulphate Ion in the Electrolytic Production of Magnesium

2) The introduction of $MgCl_2 + KCl$ into a solution not containing magnesium, sulphur, sulphite or thiosulphite causes blue coloring, but by the qualitative analysis of the solidified salt no ions SO_3^{2-} , SO_4^{2-} , S^{2-} were found. 3) When a blue coloring of the solution was found, elementary sulphur in the course of time was deposited on the walls of the quartz ampoule. The just discussed qualitative experiments lead to the following conclusion: When sulphurous compounds are introduced, they decompose actually either under the influence of high temperature (SO_3^{2-} , $S_2O_3^{2-}$) or in consequence of interaction with the dissolved magnesium (SO_4^{2-}). Thereby elementary sulphur is produced which is soluble in a chloride solution and evaporates from it very slowly. In the electrolyte the sulphur probably forms polymers or rings with the composition S_8 , S_6 etc., which have high surface activity in the ion liquid and can be adsorbed on the solid cathode. In order to confirm this assumption, the authors determined the capacity of the electric double layer on

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SOV/20-124-2-36/71

The Behavior of a Sulphate Ion in the Electrolytic Production of Magnesium

the surface of the molybdenum in the chloride solution. The results obtained by these measurements are shown by a diagram and explained. The presence of two desorption peaks on the curve capacity - potential makes it appear probable that the sulphur contained by the uncharged particles is the adsorbing substance. The authors thank B. N. Kabanov and D. I. Leykis for discussing the results obtained. There are 1 figure and 6 references, 5 of which are Soviet.

ASSOCIATION: Bereznikovskiy filial Vsesoyuznogo alyuminiiyevo-magniyevogo instituta (Berezniki Branch of the All-Union Aluminum-Magnesium Institute)

PRESENTED: July 31, 1958, by A. N. Frumkin, Academician

SUBMITTED: July 25, 1958

Card 3/3

5-(4) 5.4600(B)

AUTHORS: Bukun, N. G., Ukshe, Ye. A.

TITLE: On the Solution of Metallic Magnesium in Chloride Melts

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 6, pp 1217 - 1219
(USSR)

ABSTRACT: The solution of metals in salt melts plays an important part in electrochemical processes. Nevertheless the kinetics and course of this reaction have so far not been completely clarified. Various problems arising in practice called for the investigation of the reaction of metals with salt melts. The present paper contains some of the results concerning the reaction of magnesium with the melts of CaCl_2 , LiCl , SrCl_2 , BaCl_2 , NaCl , and KCl . The investigation method was described by A. I. Zhurin in reference 4. A compact piece of magnesium was heated with the salt in a steel cylinder the temperature of which was kept constant by means of the potentiometer of the type EPV-01. After the cylinder was cooled, the metallic-magnesium content of the salt was determined by means of the reaction $\text{Mg} + 2\text{H}_2\text{O} = \text{Mg(OH)}_2 + \text{H}_2$. One of the sources of error, namely the pollution of the melt with macroscopic metal particles, could

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66429

SOV/20-128-6-34/63

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On the Solution of Metallic Magnesium in Chloride
Melts

be eliminated by careful working. The second source of error, namely the formation of gas due to the reaction of the water with carbides set free by the action of Mg on the steel walls of the cylinder, proved to be negligible. Figure 1 shows the solubility of Mg in the salt melts. It is seen that the equation $MgCl_2 + Mg \rightleftharpoons Mg_2Cl_2$ holds for $MgCl_2$ concentrations above 50% only. The experimental data suggest exchange reactions of the kinds $Mg + 2Li^+ \rightleftharpoons Mg^{2+} + 2Li$ and $2Mg + 4Li \rightleftharpoons Mg_2^{2+} + 2Li_2$. The solubility of Mg decreases with the decreasing polarizing effect of the cation of the salt. Simultaneously the stability of the Mg-Mg bond decreases, which apparently is a prerequisite for the existence of the Mg_2^{2+} ion. It is concluded from this that in the system metal - electrolyte melt not only reactions of the metal with its own ions but also with the cations of the melt have to be considered. A. N. Frumkin's theory of stationary potentials holds for the potentials of liquid metals in salt melts. For the standard potential of magnesium the following expressions were found:

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On the Solution of Metallic Magnesium in Chloride Melts 66429
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$\gamma^0_{Mg/Mg_2^{2+}}$ = -2.36 v and $\gamma'_{Mg_2^{2+}/Mg^{2+}}$ = -2.84 v. There are 1 figure and 9 references, 5 of which are Soviet.

ASSOCIATION: Bereznikovskiy filial Vsesoyuznogo aluminiiyevo-magniyevogo instituta (Berezniki Branch of the All-Union Institute of Aluminum and Magnesium)

PRESENTED: June 22, 1959, by A. N. Frumkin, Academician ✓

SUBMITTED: May 19, 1959

Card 3/3

25053
S/080/60/033/010/015/029
D216/D306

S 4700

AUTHORS: Ukshe, Ye.A., Polyakova, G.V., and Medvetskaya, G.A.

TITLE: Dynamics of chlorine and magnesium on the electrolysis
of fused chlorides

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 10, 1960,
2279 - 2284

TEXT: Many investigators have shown that hydrodynamic factors influence the electrolysis of fused salts. Among these A.I. Bukhbinder (Ref. 5: LPI. Tr., 188, 115, 1957) investigated the effect of mean dimensions of gas bubbles, deposited on the anode, on the circulation rate. His equation for the mean rate of electrolyte motion has proved to be incomplete. The role of mean dimensions of gas bubbles may be deduced from a critical equation analogous to Bukhbinder's. A.N. Frumkin, and B.N. Kabanov (Ref. 6: ZhFKh., 4, 539, 1937) showed that dimensions of gas bubbles leaving the electrode depend on the wetting angle of the edge θ , surface tension of electrolyte σ , and its specific gravity γ . A critical equation

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25063
S/080/60/033/010/015/029
D216/D306 X

Dynamics of chlorine and ...

describing the hydrodynamics of the electrolyte in a cell with vertically placed electrodes, on one of which the gas is evolved, is given in general form as

$$r = f(h, l, v, \nu, \gamma, g, \beta). \quad (4)$$

In accordance with the theory of equalities, the true part of this equation may be presented in the form of derived non-dimensional complexes whose maximum number should be the same as that of dimensional parameters characterizing the process (in the given cases, there are eight: $w, h, v, \nu, l, g, \gamma, \beta$) and the number of primary dimensions (in the given case, three: mass, length and time). In this manner the number of non-dimensional complexes, characterizing the hydrodynamics of electrolyte is equal to five. These complexes were chosen by the authors in the form of Reynold's criterion

$$Re = \frac{wh}{\nu}, \text{Bukhbinder's, } Bu = \frac{vh}{\nu}, \text{Galileo's, } Ga = \frac{gh^3}{\nu^2}, \text{Weber's, } We = \frac{\rho}{\gamma h^2}, \text{and the geometrical ratio } \frac{h}{l}. \text{The first of these criterions}$$

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Dynamics of chlorine and ...

appears as function of other forms, i.e.
 $Re = f(Bu, Ga, We, \frac{h}{l})$. (5)

In this, the density of the gas was neglected which in the case of fused electrolyte is permissible. Eq. (5) can be written in the form:

$$\frac{wh}{v} = B \left(\frac{vh}{v}\right)^m \cdot \left(\frac{gh^3}{v^2}\right)^n \cdot \left(\frac{\sigma}{\gamma h^2}\right)^q \cdot \left(\frac{h}{l}\right)^p, \quad (6)$$

where B, m, n, q and p are constants. This equation differs from Bokhinder's only by the presence of Weber's criterion. By means of Eqs. (5) or (6), conditions of the magnesium electrolyte in aqueous solutions taken as a model can be determined. These three equalities should be maintained: (a) $v_{cell} = v_{model}$; (b) $v_{melt} = v_{model}$; (c) $(\frac{g}{\gamma})_{melt} = (\frac{g}{\gamma})_{model}$. Of these (a) is not difficult, while (b) and (c) for a magnesium electrolyte are similar to the 10 % solution of NaNO_3 . The effect of edge wetting angle, θ , on

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Dynamics of chlorine and ...

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D216/D306

the value of constant B was decreased by using graphite, and hence was ignored. The actual model cell was made of plexiglass and was rectangular in shape with a plexiglass "cathode" and diaphragm. The place of the anode was taken by a graphite rod, through which a channel was bored for passage of gas(nitrogen) and the rod surface was covered with an oil film. Under pressure the gas diffuses through pores of graphite rod in form of bubbles, simulating the behavior in the real cell. To imitate drops of magnesium, drops of oil were used which were introduced into the electrolyte by a pipette, through an opening in the cathode sheet. The experimental work was directed studying gas distribution and motion of magnesium drops, and their dependence on the level of the electrolyte and interelectrode distance at a given gas flow (current density). The results obtained indicated that quantitative results on the hydrodynamics of chlorine can be arrived at by model work. There are 2 figures, 2 tables, and 15 references: 11 Soviet-bloc and 4 non-Soviet-bloc.

SUBMITTED: December 26, 1959

Card 4/4

5.4600

AUTHOR:

Uksho, Ye. A.

TITLE:

On the Theory of Electrodeposition of Metals From Complex Solutions

PERIODICAL:

Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 2, pp 259-266 (USSR)

ABSTRACT:

Results of the measurement of cathode polarization, obtained in the electrodeposition from copper pyrophosphate- and copper oxalate electrolytes, are given and explained. The first experimental series was carried out with solutions of the following composition: 0.04 M CuSO₄ + 0.09-0.19 M Na₄P₂O₇ at 0.4 - 3.0 mA/cm². The cathode potentials were determined with a specially gaged millivoltmeter (with an LLPU-1 tube amplifier), and the results of measurement were tabulated (Table 1). A discharge of the ions [Cu(P₂O₇)₂]⁶⁻ whose concentration in the solution exceeds considerably that of all other ions of the complex system is most probable. The rather high stability of the complex (instability constant K = 0.22·10⁻¹⁰) indicates the possibility of a delayed discharge. The values of measurement obtained (Figs 1-3) show that the polarization depends on the concentration polarization and the Yesin effect (influence of the addendum concentration on the potential) as well as on the delayed discharge. The constant of the delayed discharge is ex-

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S/076/60/034/02/002/044
B910/B015

Card 1/2

On the Theory of Electrodeposition of Metals
From Complex Solutions

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B010/B015

tremely low for this solution, and depends on the composition of the solution. The second experimental series was carried out at 25°C with electrolytes of the composition 0.01 M CuSO₄ + 0.04 M and 0.05 M Na₂C₂O₄. The values of measurement obtained are in good agreement with those obtained by A. I. Levin (Ref 2). The discharge of the [Cu(C₂O₄)₂]²⁻ ions is shown to be most probable. The constant of the delayed discharge depends on the composition of the solution, and rises with the oxalate concentration. S. V. Gorbachev, A. V. Izmaylov, O. A. Yesin, and A. K. Babko are mentioned. There are 3 figures, 3 tables, and 8 references, 7 of which are Soviet.

SUBMITTED: August 12, 1957

Card 2/2

86844

S/020/60/135/005/036/043
B004/B075*26.2570*AUTHORS: Ukshe, Ye. A., . Bukun, N. G., and Leykis, D. I.

TITLE: The Capacity of an Electric Double Layer in Molten Salts

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 5,
pp. 1183-1186

TEXT: At present, the authors are systematically investigating the capacity of an electric double layer in molten salts. The present paper reports on results so far obtained. The experiments were carried out in an argon atmosphere at 700-800°C. The analyzer consisted of quartz with a polished molybdenum glass cover. Spectroscopically pure graphite served as a polarization electrode, Pb/KCl, NbCl₃ (1:1), 2.5 mole% PbCl₂ as a reference electrode. A melt of KCl and NaCl was used as an electrolyte. The authors investigated the capacity C of a lead- and a cadmium electrode as a function of the potential ψ at 20-200 kc/sec. This function showed a marked minimum, the potential in the case of a capacity minimum depending only on the metal type, but not on frequency and (up to 100°C) not on temperature. Capacity and resistance were dependent on frequency. Here a greater spread of values

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B004/B075

V

The Capacity of an Electric Double Layer in
Molten Salts

was found than in solutions, and continued to be so even at high temperatures. Therefore, the data measured at 200 kc/sec were taken as standards. The potential corresponding to the capacity minimum, almost fully coincides with the maximum potential of the electrocapillary curve (Refs. 4, 5). By this means, a determination of the zero potential of metals by measuring the capacity in melts is rendered possible. In order to prove the measured capacities as actually being those of the electric double layer, it is stated that the electrocapillary curve was obtained by double integration of the curve $C = f(\Psi)$. Therefrom, the following conclusions are drawn: The capacity of the electric double layer in molten electrolytes has a minimum at the zero potential of the metal. The minimum of the function $C = f(\Psi)$ corresponds to a capacity of 36-38 microfarads/cm². Capacity increase of the electric double layer with increasing charge of the metal surface can be explained by a deformation of the electron shells of the ions and by a structural densification of the melt (displacement of the holes from the layer near the electrode). With a considerable shift of potential, pseudo-capacity appears, caused by dissolution of the electrode or by a discharge of alkali cations. The authors thank Academician A. N. Frumkin, and Professor B. N. Kabanov for discussions. S. V. Karpachev and A. G. Stromberg are mentioned. There are 3 figures and 6 references; 2 Soviet, 4 US,

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The Capacity of an Electric Double Layer in
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S/020/60/135/005/036/043
B004/B075

and 1 German.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR. (Institute of
Electrochemistry of the Academy of Sciences USSR).
Bereznikovskiy filial Vsesoyuznogo aluminiiyev-magniiyevogo
instituta (Bereznniki Branch of the All-Union Institute of
Aluminum and Magnesium)

PRESENTED: July 6, 1960, by A. N. Frumkin, Academician

SUBMITTED: July 2, 1960

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Card 3/3